



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Proline Promag 200 Electromagnetic flow measurement in efficient two-wire technology for the chemical industry

For the highest operational safety round the clock

- Efficient two-wire loop-powered technology – the same high measuring performance in standard applications as four-wire devices
- Industry-optimized flowmeter – fulfills all relevant requirements of the chemical industry such as SIL, Ex approvals or diagnostics as per NE107
- Wide range of applications – reliable measurement of all conductive liquids ($\geq 20 \mu\text{S}/\text{cm}$) such as water, acids, bases, solvents or pastes
- Accurate long-term operation – corrosion-resistant liners made of PFA or PTFE
- Seamless system integration – cost-saving installation and maximum safety in operation
- Tried-and-tested sensors – successfully installed in over 1.5 million applications since 1977
- Traceable measurement results – each device is tested on accredited calibration rigs (ISO/IEC 17025)
- Worldwide sales and service network with highly competent application consultants

Endress + Hauser 

People for Process Automation

Proline

simply clever

Process monitoring is becoming more demanding and the need for maximum product quality is steadily increasing. This is why Endress+Hauser continues to provide industry-specific flow measurement solutions optimized for future technology requirements. The new generation of our Proline flowmeters is based on a uniform device concept. This means time and cost savings, as well as maximum safety over the entire plant life cycle.

Consistent and uniform

Proline is a proven and uniform product concept, designed to do the same things the same way, thereby increasing the safety and efficiency of your operations.

Ingeniously simple

Proline is user-friendly through and through, ensuring that your process can be securely controlled with confidence.

Perfect integration

Proline can be integrated seamlessly into your plant asset management, providing reliable information for optimizing production and business processes.

Promag 200

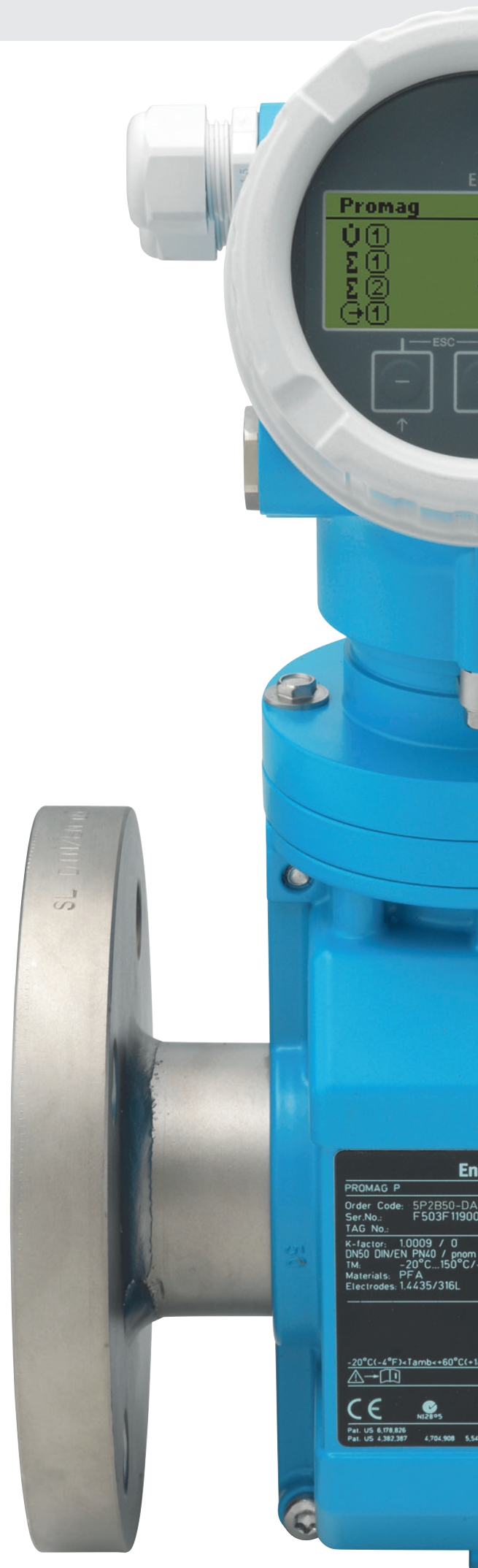
For higher safety and lower operating costs

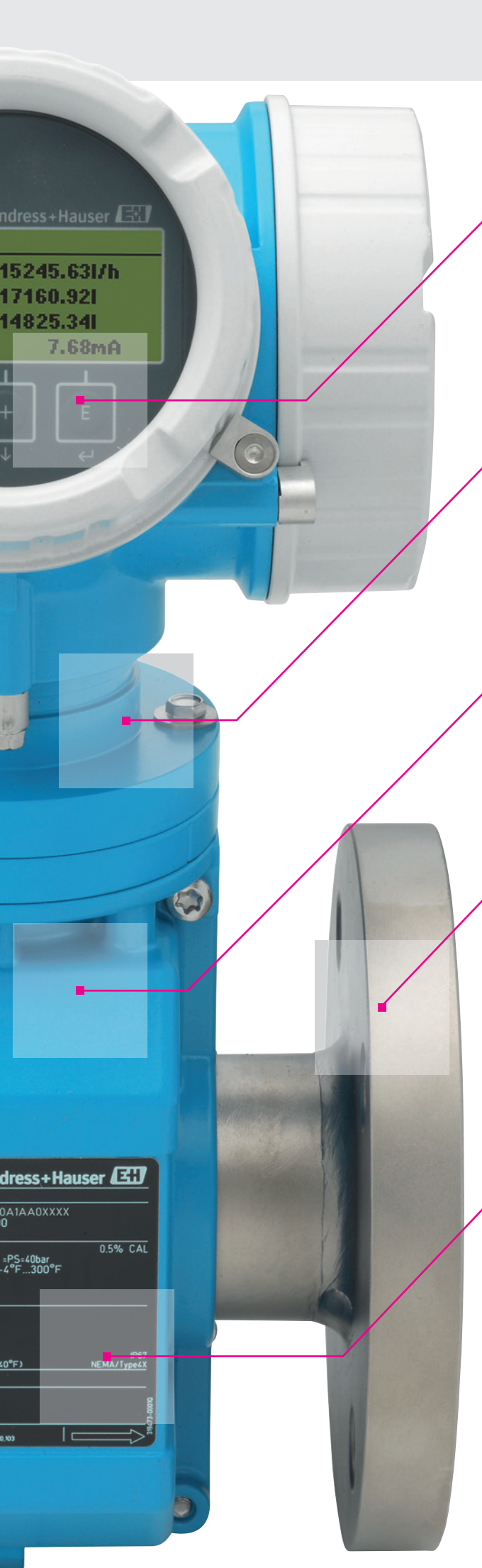
Round-the-clock operational safety and plant availability are particularly important in the chemical and petrochemical industry. In addition, plants have to be operated over the years so as to attain increasingly high performance and flexibility – as cost-effectively as possible.

The complexity involved, whether in the process or in utilities, can be managed only by uniform and standardized field instrumentation. Promag 200 is the perfect solution for exactly such areas of application.

Together with the new two-wire concept from Endress+Hauser, Promag 200 creates new benchmarks in relation to safety and uniformity in flow measurement:

- Efficient two-wire technology (4–20 mA) from the measuring point to the control room (PLC, DCS)
- Developed for SIL 2/3 applications
- Suitable for use in safety devices
- Internationally recognized Ex approvals
- High measuring performance for continuous process control





Easy operation

- Time-saving device configuration with the uniform Endress+Hauser operating concept
- Guided menu with make-it-run wizards
- Integrated help function (Tool tips)
- 16 display languages for worldwide use
- Simultaneous display of up to four measured values, e.g. volume flow, totalizer 1–3 or calculated mass flow
- Line recorder function in real time

Secure data storage (HistoROM)

- High plant availability through customer-friendly data storage concept
- Automatic measurement device data backup (HistoROM)
- Fast recovery of device and configuration data for servicing
- Display module with backup and transfer function for configuration data
- Integral data logger for monitoring and analysis of values measured

Maximum operational safety through industry standards

- Fulfills all relevant requirements of the chemical industry (e.g. SIL, NAMUR)
- Continuous self-diagnosis and error monitoring
- Clear and unambiguous categorization of errors (NE107) enabling targeted reaction to device and process errors
- SIL-compliant device development as per IEC 61508

Seamless system integration / W@M life cycle management

- Proven W@M information system for cost-effective business process support:
 - Open and flexible: connects all Endress+Hauser software programs, products and services
 - Device information can be called up around the clock (engineering, procurement, integration, operation, maintenance, service)
- Seamless integration into existing process control and asset management systems, as a true two-wire loop-powered device (4–20 mA)
- Firmware versions are available during the entire life cycle to ensure complete compatibility between the field device and process control system at all times

Sensors proven in real-world applications

- Tried and tested 1.5 million times in over 35 years
- Industry-optimized for long-term, reliable operation
- High measuring accuracy even in long-term operation
- Traceable measurement results, since every device is tested on accredited calibration rigs (ISO/IEC 17025)



Tried-and-tested sensors for your application

In the chemical process industry, electromagnetic flow measurement has proven highly successful for decades. With the new loop-powered Promag 200, this measurement method is now available in genuine, industry-compliant two-wire technology. Optimized for the chemical industry, Promag 200 offers the same measuring performance as a comparable four-wire device. This ensures seamless integration into existing process control systems, maximum operational safety and high product quality – and even more:

- Reliable measurement of all conductive liquids ($\geq 20 \mu\text{S}/\text{cm}$) such as water, acids, bases, solvents or pastes
- Measurement independent of pressure, density, temperature and viscosity
- Maintenance-free – there are no moving parts
- Free pipe cross-section, no pressure loss
- Very high operable flow range of up to 1000:1
- Excellent reproducibility and long-term stability
- High corrosion resistance due to PFA or PTFE linings
- For process temperatures up to $+150 \text{ }^\circ\text{C}$ ($+302 \text{ }^\circ\text{F}$)

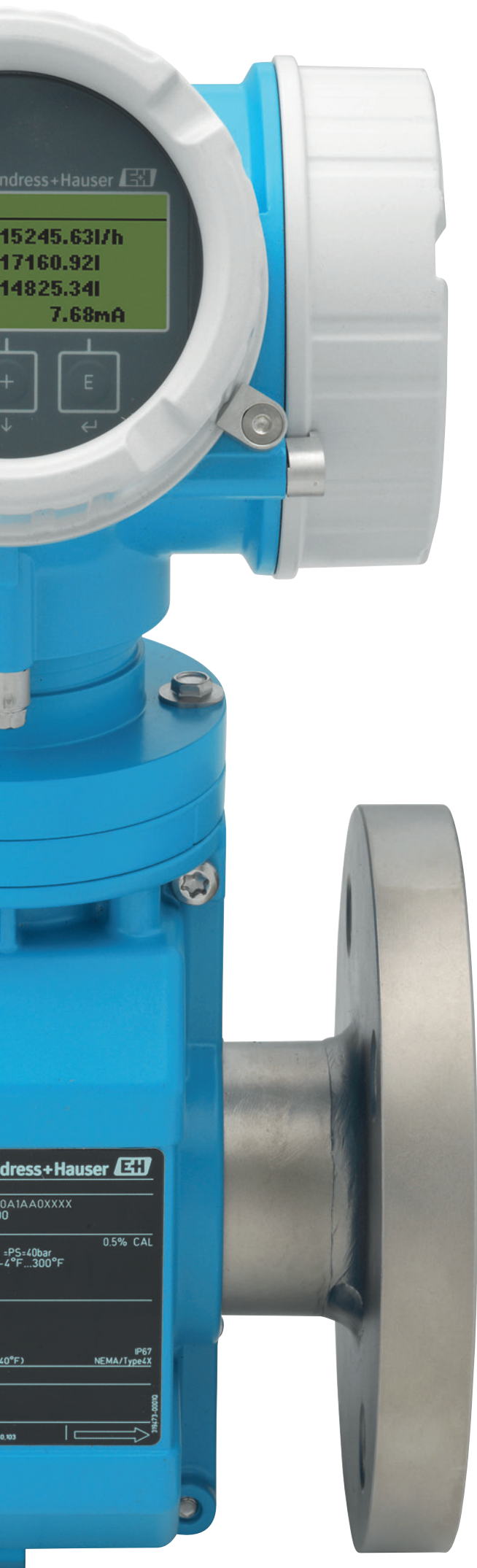


Promag H 200



Promag P 200





Two-wire technology at Endress+Hauser

Efficiency through uniformity

Combining the benefits of the electromagnetic flow measuring principle with efficient two-wire technology no longer requires compromises. It enables seamless integration into existing plant systems along with tried-and-tested Promag sensors:

- High operational safety in Ex areas due to intrinsically safe design (Ex ia)
- Reduced costs for installation and wiring
- Seamless system integration into existing infrastructures
- Common installation practice

Perfectly standardized

Uniform operation, menu structures, function designations, software, interfaces, data management, system integration, documentation, product structures, etc.

High flexibility

Modular housing components and electronic modules

Increased safety

Consistent implementation of all requirements of common industrial standards and recommendations

Precise diagnostics

Clear categorization of device or process errors according to NE107: Maintenance / Out of specification / Function check / Failure

Simply “unforgettable”

Customer-friendly data storage concept (HistoROM): back up, copy, compare or restore data

Fulfills industry standards

Interference immunity, data retention, signal level, software, pressure equipment directive, self-monitoring, etc.





Technical data

Promag 200 (transmitter)

- Display 4-line, with push buttons or optical keys (Touch Control)
- Operation
 - Via local display
 - Via operating tool, e.g. "FieldCare" from Endress+Hauser
- Power supply DC 18 to 30 V
- Ambient temperature -40 to $+60$ °C (-40 to $+140$ °F)
- Degree of protection IP66 and IP67 (Type 4X enclosure)
- Design Compact (aluminum housing)
- Galvanic isolation All circuits for outputs and power supply are galvanically isolated from each other
- Outputs Current output (4–20 mA, HART)
Pulse/frequency/switch output
- Communication HART
- Ex approvals ATEX, IECEx, cCSAus
- Ignition protection type Intrinsically safe (Ex ia)
Flame-proof (Ex d)

Subject to modification

Promag P, H (sensors)

- Max. measured error $\pm 0.5\%$ o.r. ± 2 mm/s (0.08 in/s)
- Nominal diameters Promag P: DN 15 to 200 ($\frac{1}{2}$ to 8")
Promag H: DN 2 to 25 ($\frac{1}{16}$ to 1")
- Process connections Promag P: Flanges (EN [DIN], ASME, JIS, AS)
Promag H: Flanges (EN [DIN], ASME, JIS), threaded connections, hose connection, PVC adhesive fitting, weld socket, clamp, couplings
- Process pressure Promag P: PN 6 to 40, Class 150 to 300, 10 to 20K
Promag H: PN 16 to 40, Class 150, 10 to 20K
- Process temperature Promag P: -40 to $+150$ °C (-40 to $+302$ °F)
Promag H: -20 to $+150$ °C (4 to 302 °F)
- Degree of protection IP66 and IP67 (Type 4X enclosure)
- Linings Promag P: PFA, PTFE
Promag H: PFA
- Electrode material 1.4435/316L, Alloy C-22, tantalum, platinum
Titanium (only with Promag P)
- Conductivity ≥ 20 $\mu\text{S}/\text{cm}$
- Approvals PED

The Promag P 200 / H 200 measuring system fulfills the EMC requirements according to IEC/EN 61326 and NAMUR NE21. It also conforms to the requirements of the EU and ACMA directives and thus carries the **CE** and **✓** mark.

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